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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/442,568	11/18/1999	FRANK DIMEO JR.	401	6099
23448	7590	05/04/2005	EXAMINER	
INTELLECTUAL PROPERTY / TECHNOLOGY LAW			PHAM, HOA Q	
PO BOX 14329			ART UNIT	PAPER NUMBER
RESEARCH TRIANGLE PARK, NC 27709			2877	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center"><b>Office Action Summary</b></p>	<p><b>Application No.</b></p> <p>09/442,568</p>	<p><b>Applicant(s)</b></p> <p>DIMEO ET AL.</p>	
	<p><b>Examiner</b></p> <p>Hoa Q. Pham</p>	<p><b>Art Unit</b></p> <p>2877</p>	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 30-32,35-45 and 71-74 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30-32,35-45 and 71-74 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/17/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/1/05 has been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 30-32, 71, 72 and 74 are rejected under 35 U.S.C. 102(b) as being anticipated by Bevenot et al (6,185,344).

Regarding claim 30, Bevenot et al discloses a hydrogen detector (abstract, title) comprises a light/heat source (32, 34-35) (figure 3, column 7, lines 5-10 and column 5, lines 36-43), a detector (36) and an optical filter (31) therebetween, the optical filter is heated by the heat source to an elevated temperature (column 5, lines 29-30) and disposed in proximity to the light source so that the optical filter is illuminated with light from the light source, wherein the optical filter response to the presence of the hydrogen

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by responsively changing from a first optical state to a different second state to indicate the presence of hydrogen gas in the gaseous environment (column 7, lines 11-14). The light source, the optical filter and the light detector is constructed and arranged so that light from the light source passing through the optical filter impinges on the light detector and generates a signal indication of the presence and/or concentration of hydrogen gas in the ambient environment (figure 3).

Regarding claim 31, see column 2, line 23; column 7, lines 5-6 for laser diode.

Regarding claim 32, see column 7, lines 5-6 for the use of a laser diode as heating means.

Regarding claims 71-72 and 74, see column 3, lines 16-17 for a rare earth metal thin film (palladium metal film).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 35-45, and 73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bevenot et al in view of and of Ito et al (4,661,320) and Griessen et al (Journal of Alloys and Compounds, vol. 153-154 (1997)).

Regarding claim 35, Ito et al (of record), from the same field of endeavor, teaches that the detector is a photodiode (column 2, line 59). It would have been

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obvious to one having ordinary skill in the art at the time the invention was made to replace detector of Bevenot et al photodiode as taught by Ito et al because it does not matter what type of detector the device would function in the same manner.

Regarding claim 36, Bevenot et al teaches that the earth metal thin film is deposited on the end of the optical fiber (column 1, lines 19-25 or column 7, lines 25-35). It would have been obvious to one having ordinary skill in the art at the time the invention was made to deposit the thin film on an optical output surface of the light source, thus reduce the cost of the device.

Regarding claims 37-44; Bevenot et al does not explicitly disclose the details of the optical filter barrier, however, such a feature is known in the art as taught by Griessen et al (of record). Griessen et al teaches the use a rare earth metal thin film is selected from the group consisting of Pd, Pt, Ag, Au, Ni, Co and alloys, ..etc... Thus, it would have been obvious to one having ordinary skill in the art at the time the invention to select the metal selected from the group consisting of Pd, Pt, Ag, Au, Ni, Co, Mg (Palladium, platinum, iridium), et..., as disclosed by Griessen et al., instead of the optical filter, as disclosed by Bevenot et al., because they are equivalent in function.

Regarding claim 45, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a plurality of hydrogen gas detectors instead of one taught by Bevenot et al. The rationale for this modification would have arisen from the fact that using a plurality of gas detectors would increase the accuracy of the measurement.

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Regarding claim 73, Bevenot et al teaches that the thin film is deposited on a glass substrate; however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to deposit the thin film on a roughed glass substrate to provide a better bonding there between.

### ***Response to Arguments***


6. Applicant's arguments with respect to claims 30-32, 35-45, 71-74 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham  
Primary Examiner  
Art Unit 2877

HP  
April 28, 2005